



HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

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To: Holders of Howard County Design Manuals

Subject: DRAFT changes to the Howard County Volume IV Design Manual
Standard Specifications and Details for Construction

Dear Sir or Madam:

The proposed changes to the Design Manual, known as Volume IV, have been in process for many months. This DRAFT version of the Howard County Volume IV Design Manual, Standard Specifications and Details for Construction is dated July 2015. The last comprehensive revision to Volume IV was on May 7, 2007. The Draft version will be available on-line at "<https://www.howardcountymd.gov/Departments/Public-Works/Bureau-Of-Engineering>" for the public review and comments. After a two month review period representatives from Association of Utility Contractors, Pre-Caster Associations, and Home Builders Associations will be invited to the Howard County Department of Public Works, Bureau of Engineering, Construction Inspection Division Conference Room to provide their comments on the proposed changes. Additional opportunities to comment are noted below. Once all the comments are considered, any resulting revisions will be made, and the DRAFT will be republished at the same internet location noted above. After the draft revisions are republished, the Design Manual will be presented to the Public Works Board requesting their recommendation for approval by County Council. During Howard County Council review and approval the word DRAFT will be removed, construction details will be signed by the Deputy Director of Engineering, Development and Construction. Instead of the 7/17/2015 date, a new current date (to be determined) will appear throughout the signed manual.

Please note that until the revisions to the Design Manual are signed by the Deputy Director and approved by County Council, the proposed revisions are not binding.

The proposed Design Manual Volume IV increased in size: 151 pages were added to the Standard Specifications, 6 new Construction Details were added, 60 Construction Details were revised and 14 were deleted. These changes are proposed after performing extensive research, and consultation with multiple stake holders. The resulting 899 page document needs to be studied to understand the changes. Different parties will have varying perspectives of the changes. The intention of listing changes here is to highlight, for your reference, many of the interesting changes vs. providing an exhaustive catalogue of all of the changes. We have distinguished the changes in two categories below: "Volume IV Significant Changes" and less significant "Volume IV Improvements, Updates and Clarifications."

The practice of accepting and amending the Maryland State Highway Administration's (SHA's) Standard Specification is continued in the current proposed revisions to Volume IV; however, please note that Category 300 & Category 500 now stand alone. We incorporated all text of SHA's 2008 Hardcopy Standard Specifications as well as updating them according to the SHA SUPPLEMENTAL SPECIFICATIONS AND PROVISIONS TO THE JULY 2008 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS BOOK SPECIAL PROVISION INSERTS (as published on SHA's website). If this approach of completely publishing categories is appreciated by our stakeholders (vs referencing SHA's), in our future revisions, we will consider completely publishing other categories.

Significant changes

This category includes changes in existing requirements as well as imposing new requirements to improve the quality of the construction and consistency within the Design Manual. Additionally, this category includes New Construction Details or Existing Details that have been revised to clarify multiple ambiguities in the drawings.

A. Standard Specifications

- Page 99 (PDF 233) paragraph 504.03 Construction, Pre-Paving Meeting added to require a meeting on site before the paving operation. The Inspector, Paving Foreman, Paving Superintendent and a representative from testing agency shall be present in the meeting. The contractor shall submit the Plant name and location, Geotechnical lab name and location responsible for testing core samples, asphalt quantity and paving schedule, prior scheduling the meeting.
- Page 105 (PDF 239) paragraph 504.03.11 Sampling & Testing For Density Determination added to establish the quality control requirements of paving.
- Page 95 (PDF 229) paragraph 502.03.04 Compaction, the compaction requirement for Cement Modified Soil changed from 95% of maximum dry density as determined by standard proctor test (ASTM D698) to 97% of maximum dry density as determined by modified proctor test (ASTM D1557). The modified proctor test is more representative of the compaction densities that can be achieved with modern equipment. The 97% compaction requirement is consistent with the subgrade compaction requirement specified in section 204.03.04.
- Page 89 (PDF 223) paragraph 501.03.10 Compaction, statement added to require test rolling of the aggregate base course before paving.
- Page 45 (PDF 179) paragraph 204.03.04 Compaction, statement added to require test rolling of the embankment fills, and trench backfill within the road right of way prior to installation of aggregate base.

- Page 76 (PDF 210) SECTION 317- Stormwater Management (SWM) Filtration Facilities, added from SHA SUPPLEMENTAL SPECIFICATIONS AND PROVISIONS TO THE JULY 2008 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS BOOK SPECIAL PROVISION INSERT (herein after referred to as SPI) dated 4/11/2011 Section 316 Stormwater Management Filtration Facilities.
- Page 267 (PDF 401) paragraph 916.01 Borrow Excavation, the SHA soil characteristics were adopted from SPI dated 04/06/2009 Section- 916 Soil and Soil Aggregate Borrow. As a result, the Select Borrow gradation is specified and maximum Liquid Limit and Plasticity Index were reduced to 34 and 7 from 40 and 10 respectively.
- Page 110 (PDF 244) Minimum asphalt lift thickness increased to 1.5” for 9.5mm mix designation. The thickness is changed from 1” to 1.5” because based on the size of the aggregates, 1” paving thickness is not achievable for the 9.5mm mix designation.
- Page 442 (PDF 576) paragraph 1100.03.01 As-Built Requirements, paragraph added to provide more clarification to the current process of As-Built preparation and submittal to the County.

B. Construction Details

The changes are marked with a red triangle beside them. The following details have been significantly changed or newly added to the manual.

- Detail D – 4.01 (PDF 745) Storm Drain Inlet General Requirement, new detail.
- Detail D – 4.11 (PDF 749) Type D Inlet with Beehive Grate, new detail.
- Detail D – 4.35 (PDF 761) Inlet Flow Through, new detail.
- Detail D – 9.02 (PDF 777) Rain Garden Private For Reference, blank spaces for As-Built information added to the detail so it can be used in SWM Certification.
- Detail D – 9.03 (PDF 778) Micro-Bioretention Facility Private For Reference, new detail.
- Detail E – 2.03 (PDF 735) Grinder Pump, showing generic tank, pump and other components.

The following details were re-drawn and sketches added to the sheet to show the integration of the inlet and curb & gutter. The details clarify the location of expansion/contraction joints, maximum gutter slope at the inlet, slope transition, and underdrain knockout.

- Detail D – 4.02 (PDF 746) Type A-5 Inlet Precast
- Detail D – 4.03 (PDF 747) Type A-10 Inlet Precast

Improvements, updates and clarifications

A. Standard Specifications

The following sections were copied entirely from the SHA book or the latest SPI (published here instead of the Reader having to research the SHA website):

- Page 49 (PDF 183) Section 301- Class 3 Excavation for Incidental Construction
- Page 49 (PDF 183) Section 302- Selected Backfill
- Page 54 (PDF 188) Section 304- Structural Plate Pipe and Structural Plate Pipe for Arch Culverts
- Page 62 (PDF 196) Section 307- Prefabricated Edge Drains
- Page 63 (PDF 197) Section 309- Concrete Ditches
- Page 65 (PDF 199) Section 310- Concrete Slope and Channel Protection
- Page 66 (PDF 200) Section 311- Riprap Ditches
- Page 67 (PDF 201) Section 312- Riprap Slope and Channel Protection
- Page 69 (PDF 203) Section 313- Gabions
- Page 70 (PDF 204) Section 314- Flowable Backfill for Utility
- Page 71 (PDF 205) Section 315- Infiltration Trenches
- Page 87 (PDF 221) Section 501- Aggregate Base Course
- Page 96 (PDF 230) Section 503- Chip Seal Surface Treatment
- Page 107 (PDF 241) Section 505- Asphalt Patches
- Page 112 (PDF 221) Section 508- Milling Asphalt Pavement

The following section was added from Howard County Design Manual Volume III.

- Page 99 (PDF 233) paragraph 504.03 Construction, added Paving Section. This section clarifies the sub grade soil CBR requirement within the road right of the way. It gives the option to the contractor to specify the paving section after installation of the utilities, based on the new CBR value of the disturbed soil and weather there is a need for Cement Modified Soil or not.

The following sections have been updated per latest SHA Special Provision.

- Page 1 (PDF 135) Paragraph 101.03 Construction – Erosion and Sediment Control, updated per SPI Section 308 – Erosion and Sediment Control dated 1/5/2016.
- Page 219 (PDF 353) Section 901- Aggregates, updated per SPI Section 901 – Aggregate dated 2/9/16.

The following paragraph added to Preface and General Conditions to provide clarification.

- Page 2 of 2 Preface (PDF 6) paragraph Design Manual Waiver Requirement added to clarify the need for submission of Design Manual Waiver Request if the Construction Documents are different than Standards.
- General Condition Page 1 (PDF 11) paragraph (h) added definition of Engineer of Record.

B. Construction Details

- Detail S – 1.32 (PDF 704) Manhole Drop Connection Type “A” and “B” improved the drawing, eliminated the use of concrete in Type “A” connection.

The following details were corrected and improved.

- Detail G – 5.11 (PDF 620) Precast Manhole
- Detail W – 3.27 (PDF 682) Water Meter ¾” Outside Meter Setting
- Detail E – 2.02 (PDF 734) Grinder Pump Backfill
- Detail D – 4.10 (PDF 748) Type D Inlet
- Detail R – 4.01 (PDF 799) Sidewalk Ramp Type A
- Detail R – 4.02 (PDF 800) Sidewalk Ramp Type B
- Detail R – 4.03 (PDF 801) Sidewalk Ramp Type C

The objective of revising the Design Manual Vol IV is to continuously provide a sound, workable and up-to-date guide for standardization of all design and construction projects in Howard County. Comments and recommendations regarding this Manual are appreciated by the Department of Public Works and should be sent by email to the Deputy Chief, Construction Inspection Division Bureau of Engineering Mr. Kamran Sadeghi ksadeghi@howardcountymd.gov , please use subject line “DRAFT Design Manual Vol. IV 2016.”

The Design Manual is the culmination of several months of preparation by the County staff members and review by various County Departments and professional organizations. Our thanks go out to all who participated and contributed to this effort.

Very truly yours,



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